

### ABSTRACT OF THE DISCLOSURE

A method and apparatus for measuring an apparent depth ( $l$ ) of a section of an eye (30) are disclosed. Light is focused to a measurement location (15) proximate or within the eye. The measurement location is scanned through the section and upon passing through first and second refractive index interfaces defining the section, a respective reflected light signal is detected, from which apparent positions of the first and second interfaces may be derived. Preferably, a confocal scanning arrangement is employed. Preferably, the section is the aqueous humor (34) of the eye (30). From changes in its refractive index ( $n$ ) corresponding changes in glucose concentration in the aqueous humor and, in turn, in the bloodstream of a patient may be derived, offering a non-invasive monitoring means for diabetic patients. The apparatus may be a hand-held device, employing microelectromechanical systems. The radius of curvature ( $R$ ) of a curved section, such as a cornea (32) or ocular lens (36), may also be measured to determine refractive errors of the eye.